

BEFORE THE
DEPARTMENT OF TRANSPORTATION
OFFICE OF THE SECRETARY
WASHINGTON, D.C.

TRANSATLANTIC, TRANSPACIFIC, TRANS-
BORDER, AND LATIN AMERICAN SERVICE
MAIL RATES INVESTIGATION

Docket OST-1996-1629

**NOTICE OF THE UNITED STATES POSTAL SERVICE
OF FILING OF SUPPORTING DATA**

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Date Filed: December 30, 2003

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**NOTICE OF THE UNITED STATES POSTAL SERVICE
OF FILING OF SUPPORTING DATA
(December 30, 2003)**

The United States Postal Service hereby gives notice that it is filing the supporting data that underlie the summary presentations provided to the carriers and the Department last month and filed in this docket as OST-1996-1629-305. The supporting data are referred to in and provide support for the Reply of the United States Postal Service to Carriers' Answers to its Motion for Convening of Meeting and Continuation of Current Rates, filed herewith today.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person listed below by First-Class Mail, and by email where such addresses are listed.

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United States Postal Service International Mail Rate Analysis

30 December 2003



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Executive Summary



Analysis Objective & Approach

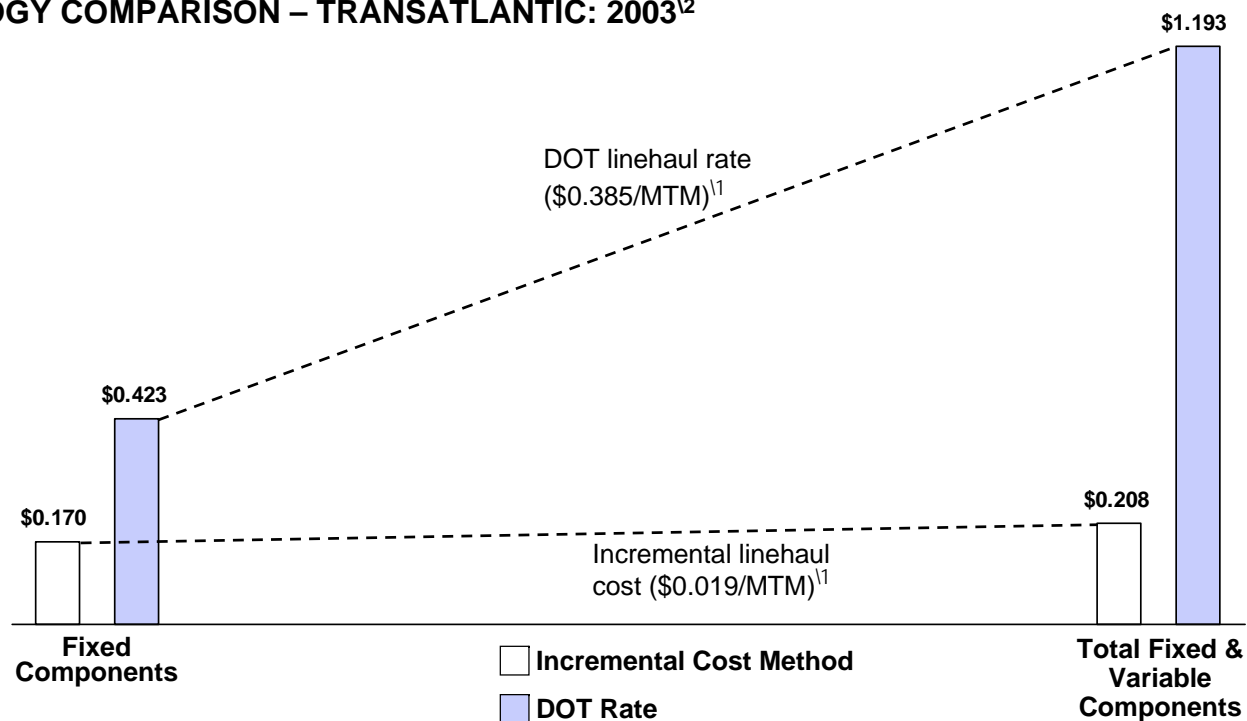
- US international mail transportation rates are regulated by the Department of Transportation (DOT). These base rates were established in the late 1970s, primarily on a space-based cost allocation methodology. New rates are determined periodically by using an indexing approach from carriers' costs assuming a linear relationship.
- The USPS undertook the present analysis to understand the appropriateness of these rates and to get an assessment of the international mail transportation rates & provider cost structures.
- The marginal cost method (*Incremental Cost*) rooted in an activity-based cost model (making due allowance for G&A and profit) was adopted to understand the true cost associated with mail carriage. The method:
 - Utilizes appropriate fixed and variable cost components
 - Applies to both combination and all cargo carriers
 - Is appropriate since the transportation of mail is incremental to the primary business of carriers
 - Combination carriers: The primary business is the transportation of passengers and their baggage
 - All cargo carriers: The primary business is transportation of palletized / containerized freight (and organic documents/packages for integrators)



Rate Comparison – Transatlantic

- The fixed portion of the DOT rate exceeds that of the incremental cost by a factor of 2, whereas the total DOT rate is more than 5 times the estimated marginal cost.

METHODOLOGY COMPARISON – TRANSATLANTIC: 2003¹² (USD/ Pound)



NOTES: ¹¹ Slope indicates the rate of increase of linehaul cost. See Appendix III for definition of terms.

¹² For an average length of haul of 4,000 miles assuming that the regional volume and distribution pattern for 2003 stays the same as in 2002.

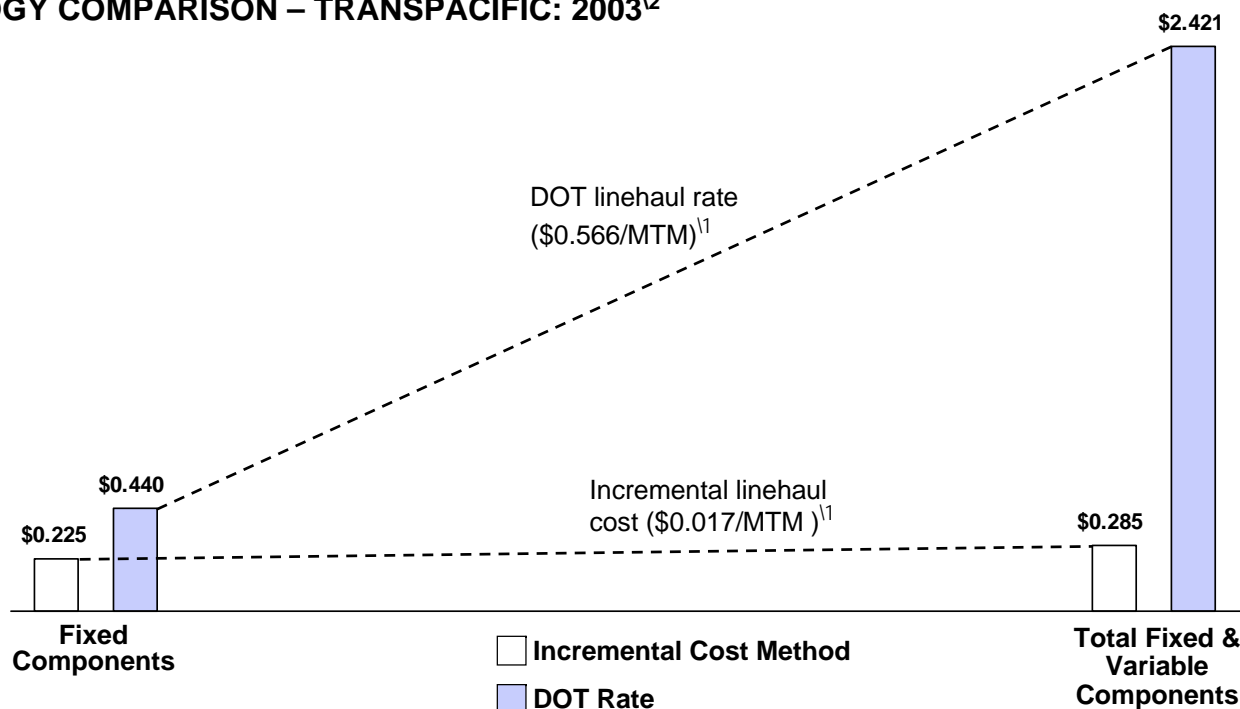
SOURCES: DOT rates from Docket 37392, OST - 96 - 1629, filed 12 May 2003; incremental cost from results of the international mail rate analysis described in this document.



Rate Comparison – Transpacific

- The total DOT rate is nearly 10 times the estimated incremental cost due to the difference between allocated and incremental cost methodologies. The longer average length of haul for the transpacific sector also contributes to the significant gap.

METHODOLOGY COMPARISON – TRANSPACIFIC: 2003¹² (USD/ Pound)



NOTES: ¹¹ Slope indicates the rate of increase of linehaul cost. See Appendix III for definition of terms.

¹² For an average length of haul of 7,000 miles assuming that the regional volume and distribution pattern for 2003 stays the same as in 2002.

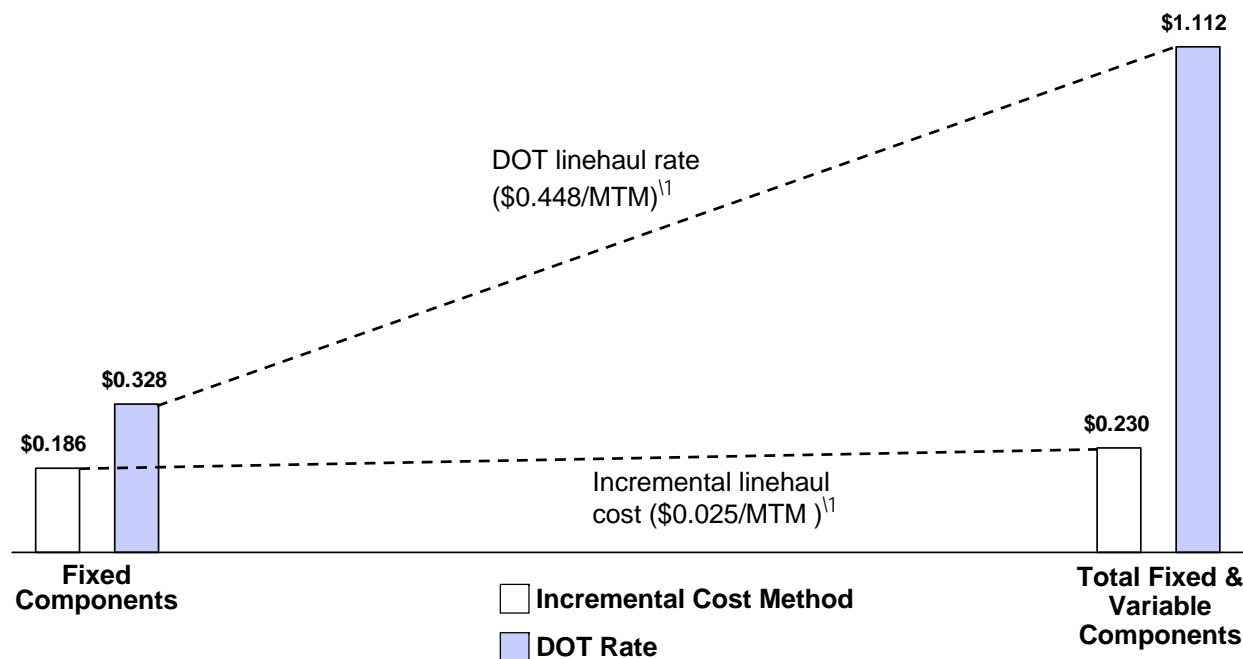
SOURCES: DOT rates from Docket 37392, OST - 96 - 1629, filed 12 May 2003; incremental cost from results of the international mail rate analysis described in this document.



Rate Comparison – Latin

- The fixed portion of the DOT rate is nearly twice that of the incremental cost, whereas the total rate (inclusive of linehaul) is nearly five times the marginal cost estimate, due to the differences in allocated and incremental cost methodologies.

METHODOLOGY COMPARISON – LATIN: 2003¹² (USD/ Pound)



NOTES: ¹ Slope indicates the rate of increase of linehaul cost. See Appendix III for definition of terms.

² For an average length of haul of 3,500 miles assuming that the regional volume and distribution pattern for 2003 stays the same as in 2002.

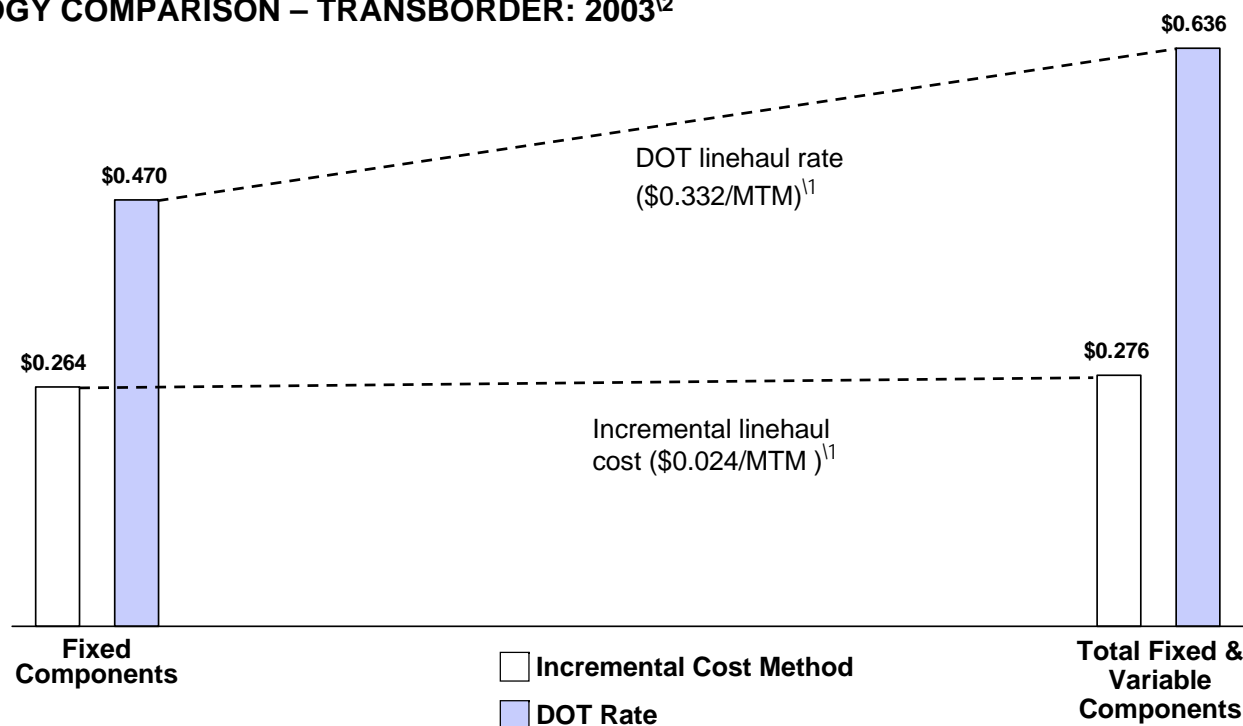
SOURCES: DOT rates from Docket 37392, OST - 96 - 1629, filed 12 May 2003; incremental cost from results of the international mail rate analysis described in this document.



Rate Comparison– Transborder

- The gap between the DOT rate and marginal cost estimate for the transborder region is not as significant as that for other regions, given the smaller average length of haul.

METHODOLOGY COMPARISON – TRANSBORDER: 2003^{\2} (USD/ Pound)



NOTES: \1 Slope indicates the rate of increase of linehaul cost. See Appendix III for definition of terms.

\2 For an average length of haul of 1,000 miles assuming that the regional volume and distribution pattern for 2003 stays the same as in 2002.

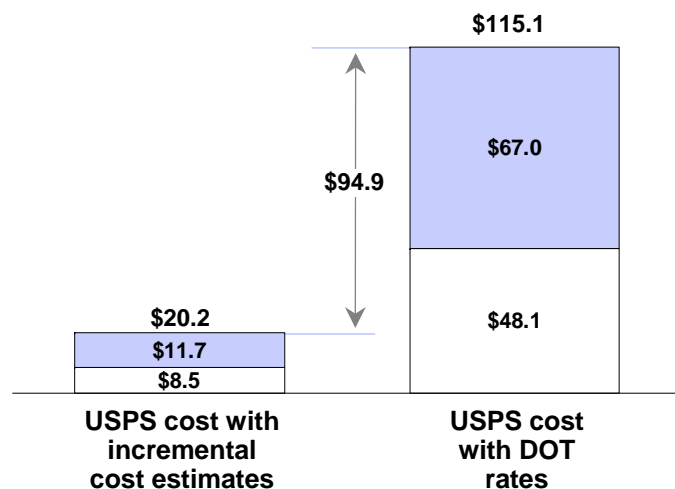
SOURCES: DOT rates from Docket 37392, OST - 96 - 1629, filed 12 May 2003; incremental cost from results of the international mail rate analysis described in this document.



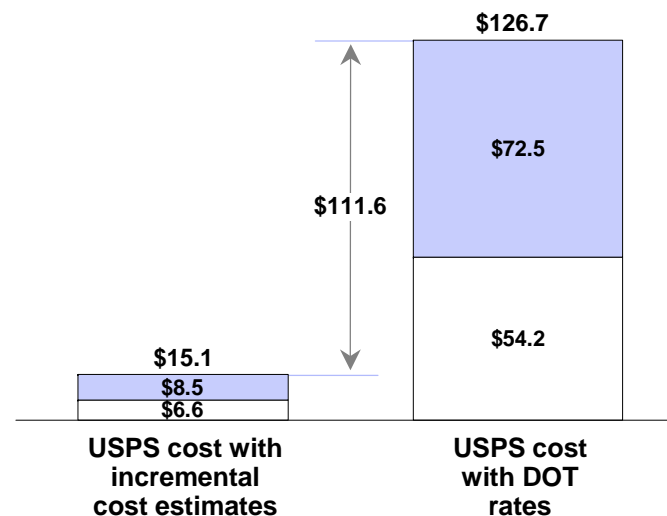
USPS International Mail Transportation Cost by Region

USPS ANNUAL COST BY METHOD: CY2003^{\1}
(USD in Millions)

TRANSATLANTIC



TRANSPACIFIC



■ Civilian Mail □ Military Mail

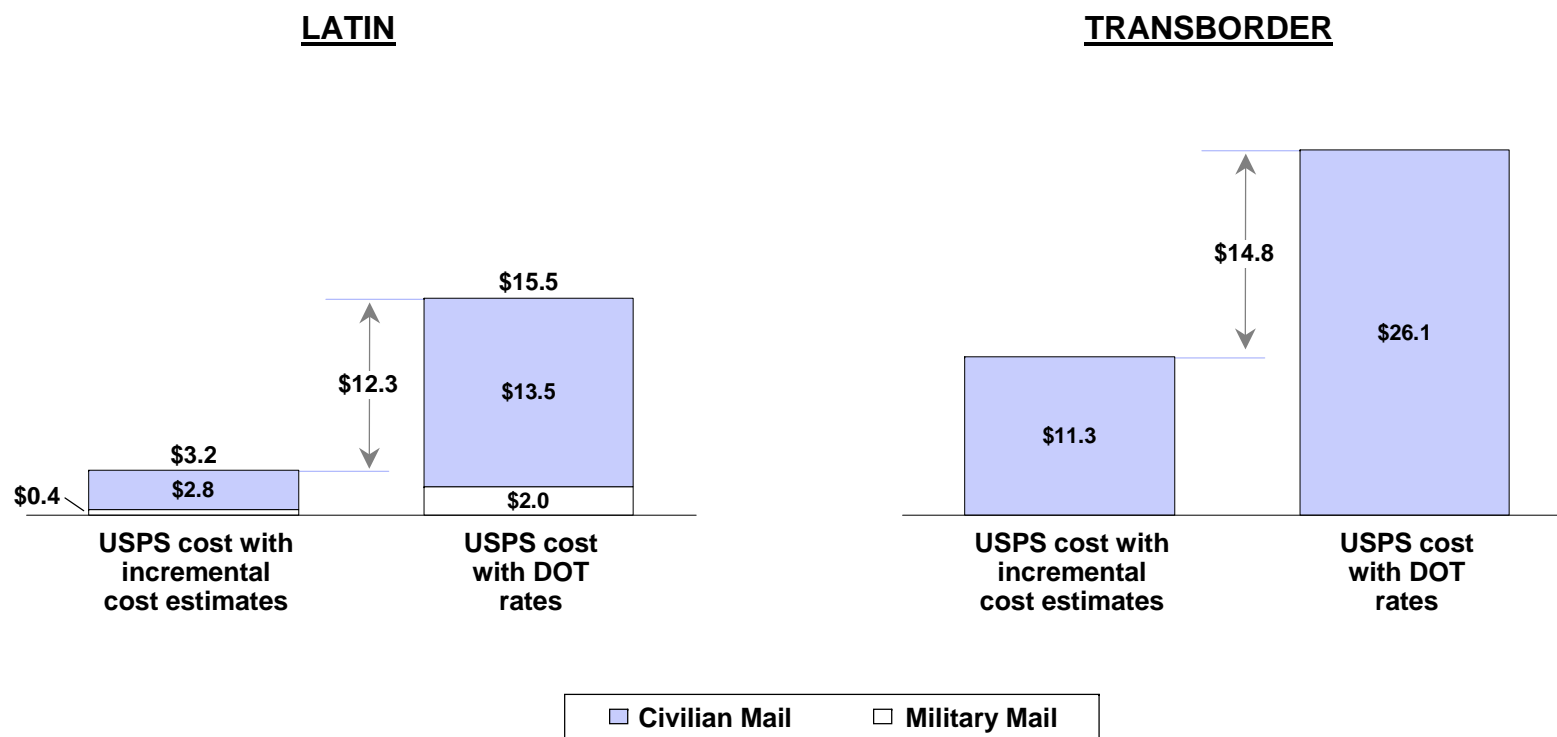
NOTE: \1 Total cost based on average length of haul assumption of 4,000 miles for Transatlantic and 7,000 miles for Transpacific routes; assuming that regional volumes and distribution patterns for 2003 are the same as in 2002. Military mail figures include MOM (Military Ordinary Mail) and SAM (Space Available Mail) volumes at appropriate DOT rates.

SOURCES: DOT rates from Docket 37392, OST - 96 - 1629, filed 12 May 2003; incremental cost from results of the international mail rate analysis described in this document, mail volumes from USPS.



USPS International Mail Transportation Cost by Region

USPS ANNUAL COST BY METHOD: CY2003¹ (USD in Millions)



NOTE: ¹ Total cost based on average length of haul assumption of 3,500 miles for Latin and 1,000 miles for Transborder routes; assuming that regional volumes and distribution patterns for 2003 are the same as in 2002. Military mail figures include MOM (Military Ordinary Mail) and SAM (Space Available Mail) volumes at appropriate DOT rates.

SOURCES: DOT rates from Docket 37392, OST - 96 - 1629, filed 12 May 2003; incremental cost from results of the international mail rate analysis described in this document, mail volumes from USPS.

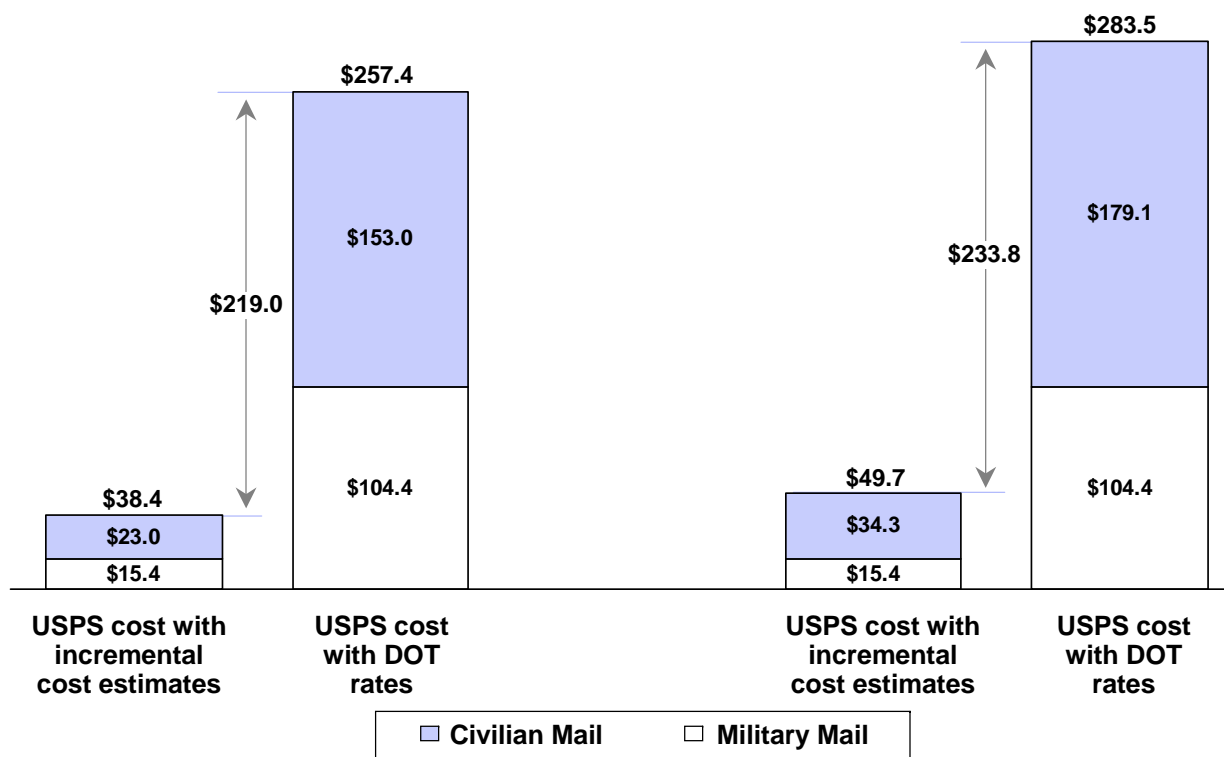


USPS International Mail Transportation Cost – Summary

USPS ANNUAL COST BY METHOD: CY2003¹
(USD in Millions)

TOTAL WITHOUT TRANSBORDER

TOTAL ALL REGIONS



NOTE: ¹ Total cost based on average length of haul assumption by region; assuming that regional volumes and distribution patterns for 2003 are the same as in 2002. Military mail figures include MOM and SAM volumes at appropriate DOT rates.

SOURCES: DOT rates from Docket 37392, OST - 96 - 1629, filed 12 May 2003; incremental cost from results of the international mail rate analysis described in this document, mail volumes from USPS.



Current DOT Rate Structure & Update Methodology



Current DOT Rate Structure

- Base rates were established in the 1970s by the DOT primarily on a space-based allocation costing methodology. The rates are updated at regular intervals based on the change in costs that the carriers face during a given timeframe over that of the base year costs.
- The DOT updated rates for CY2003 are summarized below.

DoT Region	Mail Type	Linehaul Charge ^{\1} (\$ / Billing Ton-Mile)	Terminal Charge ^{\2} (\$ / lb)
Atlantic	Priority & MOM	\$0.3849	\$0.4231
	Space Available	\$0.2467	\$0.3815
Pacific	Priority & MOM	\$0.5662	\$0.4400
	Space Available	\$0.3491	\$0.3809
Latin	Priority & MOM	\$0.4479	\$0.3281
	Space Available	\$0.3449	\$0.3038
Transborder	Priority & MOM	\$0.3320	\$0.4702

NOTES: \1 Linehaul rates for sacks.

\2 Terminal charges for sacks for all regions. For transborder, the terminal charges are the summation of taxi, departure and terminal rates.

SOURCE: Docket 37392, OST - 96 - 1629, filed 12 May 2003. Figures rounded to four significant digits after the decimal.



DOT Rate Update Methodology

- Each year, the percentage change in certain cost pools for a 12-month timeframe (“timeframe”) for a group of carriers considered in a region are calculated. Since there is an 18-month lag between the beginning of the “timeframe” and the date when the updated rates are effective, the updated rates are pro-rated for an 18-month period. For example, for the updated rates effective 1 January 2002, the “timeframe” for underlying data was 1 July 2000 – 30 June 2001.
- Using these percentage changes in the cost pools, the rates are updated assuming a linear relationship between the costs and rates.
- This update methodology in effect incorporates a lag in the price changes – a dramatic increase in fuel price would be incorporated in the subsequent period of time when the fuel prices could have actually reduced. Conversely, carriers facing any increases in fuel or labor prices in a given timeframe would be compensated in the following time period.



USPS Demand & Carrier Operational Characteristics



Civil & Military CY2002 Statistics

CIVIL VOLUME

DoT Region	Region Code	Weight (kgs)	Weight (lbs)	% Share	Top 3 Countries in the Region	% Regional Share of Top 3 Countries
Atlantic	A	25,486,801	56,188,711	40%	Germany, UK, France	59%
Pacific	P	13,578,071	29,934,488	21%	Japan, Australia, S. Korea	59%
Latin	L	5,500,943	12,127,489	9%	Brazil, Argentina, Colombia	32%
Transborder	T	18,639,139	41,092,220	29%	Canada, Mexico	100%

MILITARY VOLUME

DoT Region	Region Code	Weight (kgs)	Weight (lbs)	% Share	Top 3 Countries in the Region	% Regional Share of Top 3 Countries
Atlantic	A	18,464,724	40,696,252	62.08%	Germany, Italy, UK	68%
Pacific	P	10,450,220	23,032,285	35.13%	Japan, S. Korea, Philippines	93%
Latin	L	820,572	1,808,541	2.76%	Honduras, Colombia, Peru	35%
Transborder	T	8,071	17,788	0.03%	Canada, Mexico	100%

SOURCE: USPS – CY 2002 Statistics. Products included are letters, Air CP, GPM & EMS and military mail.



Carriers Selected by Zone

- The DOT selects certain carriers based on their regional scope & scale as the drivers of cost for various regions.
- Our analyses focused on these same carriers by region and their attendant characteristics (like prevalent aircraft type), assessing their operational and cost characteristics.

Representative Carriers* for Various Regions			
Atlantic	Pacific	Latin Am.	Transborder
AA	AA	AA	AA
CO	CS	CO	CO
DL		DL	DL
NW	NW		NW
UA	UA	UA	UA
	FX		US

SOURCE: Docket 37392, OST - 96 - 1629, filed 12 May 2003.

* See Appendix II for a listing of carrier codes and names.



Carrier Operations – Prevalent Equipment Types

Rate Lane Carrier	Most Prevalent Aircraft Type* Deployed by Carrier by Region			
	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
AA	777	777	757	M80
CO	764	738	738	735
DL	763		763	757
NW	D10	747		D9S
UA	777	777	763	735
US				319
FX		M1F		

Rate Lane Carrier	Annual Departures for Equipment Types Shown Above			
	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
AA	11,646	2,956	26,849	490,251
CO	3,240	13,391	15,823	83,808
DL	15,985		4,160	162,573
NW	8,437	7,426		280,326
UA	13,444	5,279	2,675	94,166
US				111,361
FX		13,993		

SOURCE: OAG Schedules; Form 41 CY 2002.

* See Appendix II for a listing of aircraft codes and names.



Incremental Cost Analysis



Mail Share of Carrier Operations

- Analysis of carrier CY 2002 Form 41 filings suggests that for the combination carriers mail revenue represents less than 1% of total operating revenue.
- Though mail RTMs comprise 11% of the cargo RTMs, mail contributes a higher share of the cargo revenue (15%) for the combination carriers.

Systemwide Statistics - CY 2002				
Carrier	Mail Revenue as a % of Total Op. Revenue	Mail RTMs as a % of Total RTMs	Mail Revenue as a % of Cargo Revenue	Mail RTMs as a % of Cargo RTMs
AA	0.7%	1.7%	16.8%	10.8%
CO	0.6%	1.5%	14.8%	10.2%
DL	0.7%	1.9%	16.0%	12.5%
NW	0.8%	1.9%	9.3%	7.3%
UA	1.2%	2.8%	19.3%	13.8%
US	0.3%	1.2%	14.3%	11.1%
Subtotal	0.8%	1.9%	15.2%	11.0%
FX	0.2%	0.6%	0.4%	0.6%
Total	0.6%	1.8%	4.8%	6.1%

ANALYSIS NOTES: 1. Cargo statistics include mail and freight statistics.
2. Statistics associated with both, scheduled and non-scheduled operations are included.

SOURCE: Form 41.



Approach to Incremental Cost Analysis

- The USPS realizes that the core business of passenger carriers is transportation of people and their baggage and that of cargo carriers is carriage of their freight products (and documents & packages in case of integrators).
- For these passenger and cargo carriers, a secondary business is the transportation of mail. Certain costs associated with the core business do not vary with secondary lines of business.
- As a result, USPS expects to pay a fair and reasonable incremental cost associated with the handling and transporting of its product – to the degree that the transportation of mail causes the air carrier to incur additional costs (with a reasonable adjustment for G&A and profit).
- Therefore, the USPS believes an approach to establishing mail transportation rates based on a marginal cost approach is eminently reasonable. Such a methodology is warranted in a by-product costing environment of international mail transportation.



Concept of Incremental Cost

- 'Incremental Cost' or 'Marginal Cost' for purposes of this analysis is considered to be the additional expense incurred by carriers for handling and transporting USPS mail – including reasonable adjustments for G&A and profit.
- Marginal costing techniques take into consideration the 'cost-causative' nature of entities contributing to the total cost and do not involve allocation of the entire cost to the individual entities.
- By definition, carriers would not incur 'incremental cost' if no mail were tendered by the USPS.
- These incremental costs for mail carriage depend on factors like:
 - Aircraft fuel burn
 - Length of haul
 - Terminal handling activities
 - Mail volume transported
- These costs do not depend on activities unrelated to mail carriage like:
 - Flight attendant salaries
 - Maintenance expenses
 - Marketing, advertising expenses



Incremental Cost Methodology

- Incremental cost was estimated for each region based primarily on carrier DOT filings (Form 41 and T-100). Overall financial and operating parameters for each region for all aircraft types operated by the carriers were included in the analyses where relevant.
- Fuel burn parameters are specific to aircraft type, and hence for the incremental fuel cost portion of the overall marginal cost an aircraft type-specific methodology was adopted.
- Similarly, to estimate landing charges, the most prevalent aircraft type based on scheduled departures to each region was selected as the representative for that region and corresponding operational and structural statistics were utilized to provide reasonable estimates for the entire region.
- A detailed lane-based analysis of carrier T-100 data was undertaken to estimate the Market Opportunity Cost (MOC) component. Traffic statistics for all equipment types operated by the carriers on each lane were utilized in the analysis.
- Taking this overall approach has given conservative estimates, while sufficiently making the point that the current rates are off by a significant factor for all regions.



Components Included in Incremental Cost

Cost Component	Definition	Cost Driver	Distance Variation
Fuel Cost	Increase in fuel expense caused by incremental fuel burn resulting from mail carriage	\$ / lb / airborne hour	Yes
Terminal Handling Cost	Expenses covering loading, unloading, transportation to / from USPS facilities and other related ground activities	\$ / lb	No
Market Opportunity Cost (MOC)	Payment to compensate the carriers for potential spilled freight revenue (if any)	\$ / lb	No
Personnel Screening Expense	Expenses associated with security screening of mail handlers	\$ / lb	No
Landing Charges	Landing fees, terminal navaid fees	\$ / lb	No
General & Administrative (G & A) Expense	Administrative and management overhead incurred as a result of the activities relating to the mail contract	%	N/A
Profit	Reasonable margin associated with operating revenue	%	N/A



Incremental Fuel Cost



Description

- Consistent with marginal costing principles, the USPS believes that it is fair to compensate the carriers for incremental fuel cost.
- Carriers incur incremental fuel expenses as a direct causation of carrying mail on board their aircraft. The USPS deems it fit to compensate the carriers for this incremental fuel burn portion only and not bear an allocation of the entire fuel consumption on a flight (which would have taken place regardless of any mail carriage on that flight).
- This approach is fair not just to the carriers, but also to the USPS as this eliminates any cross-allocation of fuel costs across various product types.
- In the next few slides, following items will be addressed:
 - Incremental fuel cost methodology and related formulae
 - Fuel consumption metrics of the prevalent aircraft types
 - Weighted Average Fuel Factors (WAFF) by equipment type



Methodology

- The Office of Aviation Policy and Plans of the FAA has provided guidance regarding incremental fuel burn estimates. In report # FAA-APO-98-8, titled: 'Economic Values for Evaluation of FAA Investment and Regulatory Decisions', estimates for incremental fuel burn (per airborne hour per pound of additional payload) for various categories of aircraft types have been provided. Data extrapolation was performed for weight categories and certain equipment types where FAA data was not provided.
- Operational characteristics for the selected carriers and their respective aircraft types for various regions like average airborne hours, average fuel consumption, average fuel prices, etc. were obtained from carrier Form 41 filings with the DOT.
- Since 'transborder' region is not separated out as part of Form 41 filings, domestic statistics were used as a proxy in the transborder region calculations. Since all Group 3 carriers (those included in this study) are required to file the Form 41 (and T-100) filings – this approach provides a common base of evaluation & consistency in source data.
- Based on the average mail tender per flight, the incremental fuel cost per Mail Revenue Ton Mile (MTM)* was then calculated based on the formulae shown on the next slide.

* See Appendix III for a listing of terms and definitions.



Formulae

STEP I

$$\text{Incremental Fuel Factor} = \theta_i$$

Where θ_i is the incremental fuel in gallons per airborne hour required to carry one pound of incremental payload on aircraft type i. The value of θ varies depending on the amount of incremental payload & type of aircraft and is based on FAA guidance.

STEP II

$$IFC_r = \theta_i \times M \text{ lbs} \times \text{Fuel price per gallon} \times AH_r$$

Where IFC_r is the Incremental Fuel Cost for region 'r' for the selected aircraft type i required to carry M pounds of incremental mail. AH are the average airborne hours required for transport to a given region 'r'.

STEP III

$$UIFC_r = \frac{IFC_r}{MTM_r}$$

Where $UIFC_r$ is the Unit Incremental Fuel Cost (\$ / MTM) for region 'r' and MTM_r are the Mail Revenue Ton Miles for region 'r'.



Fuel Factors

Incremental Pounds

Aircraft ¹				Fuel Burned / AH	Gallons of fuel burned per airborne hour, for each pound of incremental weight, by payload category							
Class	Engines	Type	Code	(Gallons)	201-300 lbs	301-400 lbs	401-500 lbs	501-600 lbs	601-700 lbs	701-800 lbs	801-900 lbs	901-1000 lbs
Widebody	4	B747-400	744	3,597	0.00330	0.00330	0.00330	0.00330	0.00330	0.00329	0.00329	0.00329
Widebody	2	B767-300/400	763	1,804	0.00568	0.00568	0.00568	0.00568	0.00568	0.00568	0.00569	0.00569
Widebody	2	B777	777	2,351	0.00740	0.00740	0.00740	0.00741	0.00741	0.00741	0.00741	0.00741
Widebody	3	DC10-30	D10	2,855	0.00462	0.00480	0.00498	0.00516	0.00536	0.00555	0.00576	0.00597
Narrowbody	2	B737-500	735	947	0.00657	0.00657	0.00657	0.00657	0.00657	0.00657	0.00657	0.00657
Narrowbody	2	B737-800	738	1,073	0.00744	0.00744	0.00744	0.00744	0.00744	0.00744	0.00745	0.00745
Narrowbody	2	B757	757	1,236	0.00857	0.00857	0.00857	0.00857	0.00857	0.00858	0.00858	0.00858
Narrowbody	2	A319	319	971	0.00674	0.00674	0.00674	0.00674	0.00674	0.00674	0.00674	0.00674
Narrowbody	2	M80	M80	1,151	0.00798	0.00798	0.00799	0.00799	0.00799	0.00799	0.00799	0.00799
Narrowbody	2	D9S	D9S	1,108	0.00769	0.00769	0.00769	0.00769	0.00769	0.00769	0.00769	0.00769
Widebody	3	MD11	M11	2,728	0.00442	0.00459	0.00476	0.00493	0.00512	0.00531	0.00550	0.00571

Gallons of Fuel

Latin & Transborder¹²

NOTES: ¹ The selected aircraft types represent the most prevalent aircraft types deployed by the relevant carriers to various regions.

¹² The weight category was selected for each region based on the average dispatch weight per departure for the prevalent aircraft type.

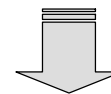
SOURCES: CY 2002 Form 41 carrier operational data, FAA APO 98-8; Table 7-16



Fuel Factors

Incremental Pounds

Aircraft ¹				Fuel Burned / AH	Gallons of fuel burned per airborne hour, for each pound of incremental weight, by payload category								
Class	Engines	Type	Code	(Gallons)	1001-1100 lbs	1101-1200 lbs	1201-1300 lbs	1301-1400 lbs	1401-1500 lbs	1501-1600 lbs	1601-1700 lbs	1701-1800 lbs	1801-1900 lbs
Widebody	4	B747-400	744	3,597	0.00329	0.00329	0.00329	0.00329	0.00329	0.00329	0.00329	0.00329	0.00328
Widebody	2	B767-300/400	763	1,804	0.00569	0.00569	0.00569	0.00569	0.00569	0.00569	0.00569	0.00569	0.00569
Widebody	2	B777	777	2,351	0.00741	0.00741	0.00741	0.00741	0.00742	0.00742	0.00742	0.00742	0.00742
Widebody	3	DC10-30	D10	2,855	0.00619	0.00642	0.00666	0.00691	0.00716	0.00743	0.00770	0.00799	0.00829
Narrowbody	2	B737-500	735	947	0.00657	0.00657	0.00658	0.00658	0.00658	0.00658	0.00658	0.00658	0.00658
Narrowbody	2	B737-800	738	1,073	0.00745	0.00745	0.00745	0.00745	0.00745	0.00745	0.00746	0.00746	0.00746
Narrowbody	2	B757	757	1,236	0.00858	0.00858	0.00858	0.00858	0.00859	0.00859	0.00859	0.00859	0.00859
Narrowbody	2	A319	319	971	0.00674	0.00674	0.00675	0.00675	0.00675	0.00675	0.00675	0.00675	0.00675
Narrowbody	2	M80	M80	1,151	0.00799	0.00799	0.00800	0.00800	0.00800	0.00800	0.00800	0.00800	0.00800
Narrowbody	2	D9S	D9S	1,108	0.00769	0.00770	0.00770	0.00770	0.00770	0.00770	0.00770	0.00770	0.00771
Widebody	3	MD11	M11	2,728	0.00592	0.00614	0.00636	0.00660	0.00685	0.00710	0.00736	0.00763	0.00792



Pacific¹²

Gallons of Fuel



Atlantic¹²

NOTES: ¹ The selected aircraft types represent the most prevalent aircraft types deployed by the relevant carriers to various regions.
² The weight category was selected for each region based on the average dispatch weight per departure for the prevalent aircraft type.

SOURCES: CY 2002 Form 41 carrier operational data, FAA APO 98-8; Table 7-16



Average Fuel Price by Region

Rate Lane Carrier	Average fuel price by carrier and aircraft type (USD / gal)			
	Atlantic	Pacific	Latin	Transborder
AA	\$0.69	\$0.69	\$0.69	\$0.72
CO	\$0.71	\$0.80	\$0.64	\$0.68
DL	\$0.66		\$0.66	\$0.66
NW	\$0.67	\$0.71		\$0.69
UA	\$0.74	\$0.74	\$0.83	\$0.71
US				\$0.70
FX		\$0.69		\$0.70



NOTE: ¹ Represents the weighted average fuel price for each region based on the carrier departures and the fuel consumption.

SOURCE: Form 41 data from Airline Monitor; August 2003 (CY 2002 data)



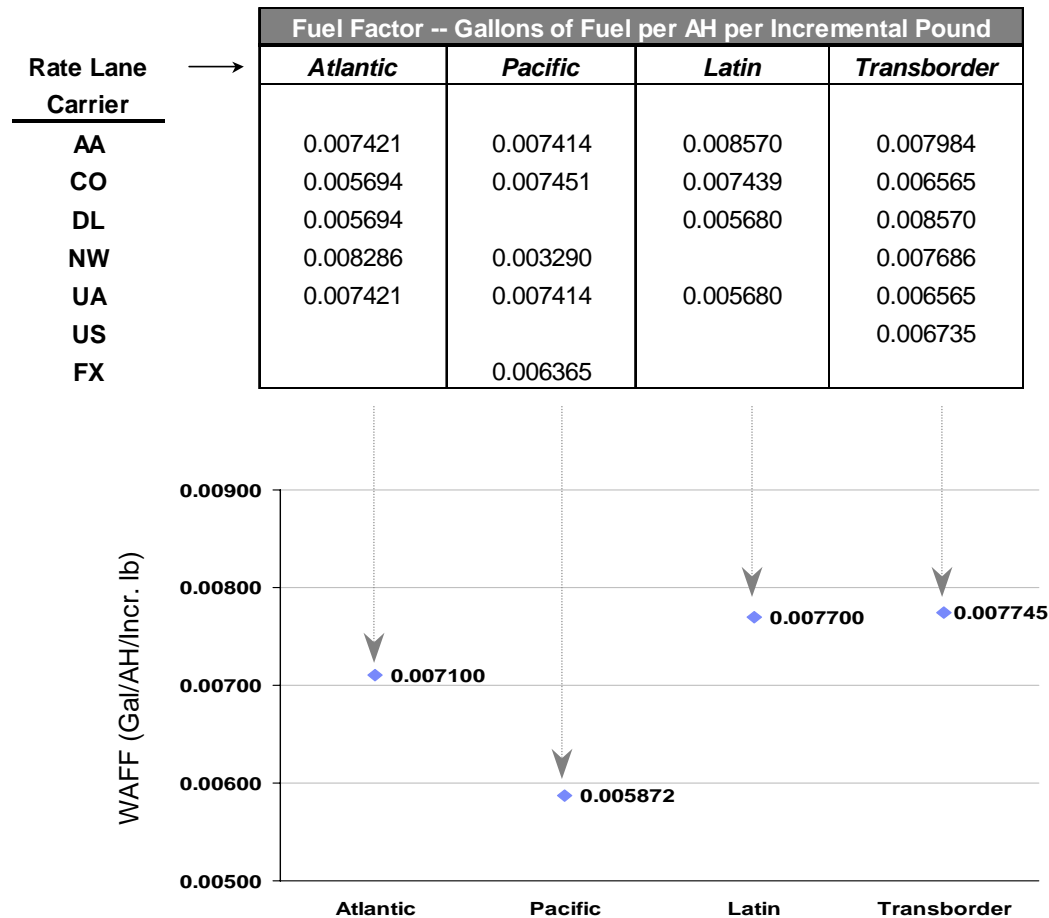
Average Fuel Burn

Rate Lane Carrier →	Average fuel burn per airborne hour (gallons)			
	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
AA	2,337	2,282	1,261	1,151
CO	1,857	974	1,171	922
DL	1,751		1,852	1,210
NW	2,855	3,597		1,108
UA	2,426	2,359	1,681	971
US				709
FX		2,728		

SOURCE: Form 41 data from Airline Monitor; August 2003 (CY 2002 data)



Weighted Average Fuel Factor



SOURCES: Form 41 carrier operational data, FAA APO 98-8; Table 7-16



Results

DoT Region	Mail Weight (lbs)	AH per Departure	Annual Mail RTMs (millions)	Incremental Fuel Required per Departure (Gal)	Incremental Fuel Cost per Departure(\$)	Annual Incremental Fuel Cost (\$)	Incremental Fuel Cost per Mail RTM
A	96,896,411	7.92	199.07	103.29	\$71.64	\$3,779,341	\$0.01898
P	52,973,252	5.39	71.96	38.99	\$27.94	\$1,202,782	\$0.01671
L	13,936,538	3.48	10.11	7.55	\$5.15	\$254,740	\$0.02519
T	41,110,013	1.71	134.18	3.72	\$2.60	\$3,183,686	\$0.02373

SOURCES: FY 2002 Form 41 carrier operational data, USPS



Incremental Terminal Handling Cost



Description

- Terminal handling costs include compensation of ground handling personnel and other expenses incurred on the ground incident to handling traffic of all types.
- Specifically with respect to mail, the activities include loading, unloading of mail containers, building of mail containers where required, drayage to and from the aircraft, etc.
- Though the carriers do not specifically separate out the terminal handlings costs incurred because of mail, such costs can be reasonably estimated from the carrier DOT filings and from previous USPS studies.



Methodology

- The carriers submit their terminal handling charges attributable to cargo (which includes passenger baggage, freight and mail) as part of their Form 41 filings.
- The carriers also submit the number of boarding passengers, weight of enplaned freight and mail by region as part of the T-100 filings.
- Using appropriate guidance provided by the DOT regarding the weight of baggage carried by the passengers, the total weight of the baggage carried by the airlines on a regional basis was calculated. Since 'transborder' region is not separated out as part of Form 41 filings, statistics from the domestic region filings were used as a proxy in the transborder region calculations.
- Conforming to marginal costing principles, costs associated with facility leases, utilities and related property taxes, etc. were excluded from the terminal handling cost. Utilizing work performed during a USPS THS (Terminal Handling Services) study^{\1}, which revealed that non-labor costs related to facilities were about 24% of the overall terminal costs, appropriate discounts were made.
- Based on the relative mail utilization of overall belly cargo, the terminal handling cost incurred on account of mail handling was calculated.

NOTE: \1 The study analyzed the cost structure of facilities located at more than 100 domestic airports. Cost components like labor (various categories), transportation and facility related expenses (lease, utilities, property insurance, maintenance) were included in the THS study.



Results

		CY 2002 Unit Mail Traffic Servicing Cost (\$ / lb)			
Rate Lane	→	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
<u>Carrier</u>					
AA		\$0.186	\$0.133	\$0.175	\$0.282
CO/CS		\$0.130	\$0.068	\$0.096	\$0.130
DL		\$0.187		\$0.170	\$0.129
NW		\$0.261	\$0.207		\$0.251
UA		\$0.065	\$0.078	\$0.075	\$0.274
US					\$0.132
FX			\$0.350		

		CY 2002 Unit Mail Traffic Servicing Cost by Region (\$ / lb)			
Rate Lane	→	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
Weighted Average		\$0.140	\$0.176	\$0.150	\$0.210

SOURCES: FY 2002 Form 41 carrier data, prior USPS studies.



Market Opportunity Cost (MOC)



Rationale

- What is Market Opportunity Cost (MOC)?
 - The difference between two revenue streams reflecting different uses of scarce capital, capacity or labor hours.
- Why is MOC relevant for incremental cost?
 - Carriers are required to carry mail on various routes (and in principle, mail has higher boarding priority than freight) -- which may preclude them from carrying potentially higher revenue yielding freight . Hence, the carriers should be compensated for any potential lost revenue – if the freight yield is found to be higher than the mail yield – in terms of a market opportunity cost payment (as a component of the overall incremental cost).
- How can MOC be quantified?
 - MOC can be quantified using a probabilistic model measuring likelihood of diversion of cargo due to scarcity of space associated with variability of passenger, freight, and mail demand.



Difference between Mail and Freight Rates

- A comparison of the airport-to-airport (ATA) freight rates* for different regions with the DOT mail rates was done to calculate the premium that one line of business commands over another.
- The market rates for freight are set by the balance between supply-demand, while the mail rates are regulated by the DOT. Freight rates were obtained from publicly available sources like World ACD (a cargo industry resource), which compiles freight rates and from professional estimates, where World ACD rates were not available.
- Comparison of the freight and mail rates shows that on average the regulated mail rates are higher than the freight rates by well over a factor of two (2), except for the transborder region. In addition, the freight rates are lower than the mail rates for all of the key lanes analyzed for all regions except the transborder region.

* See Appendix V for a detailed lane-wise comparison of DOT and freight rates.



Differential between Mail and Freight Rates

- Since there is no potential lost revenue when mail displaces freight for three of the four regions, there is no opportunity cost payment for those regions. While the average transborder DOT mail rates are higher than the freight rates, there are certain lanes where the freight rates are higher than the mail rates. Hence, MOC estimates were obtained for the transborder region only.

Region	Mail rate difference over freight rates ¹
Transatlantic	170%
Transpacific	298%
Latin America	144%
Transborder	6%

NOTE: ¹ Indicates the % by which DOT mail rates are higher than the freight rates for major lanes (inclusive of fuel and security surcharge). See Appendix V for a detailed lane-wise comparison of DOT and freight rates.



Analysis Approach

- For purposes of MOC, the analysis was performed at lane level, for all potential transborder lanes that carried mail in CY 2002 to capture the characteristics of the traffic pattern on those lanes.
- The individual lane-based analysis gives an accurate estimate of the potential for freight diversion resulting from mail volumes on all the lanes of USPS interest for the transborder region.
- The unit MOC so calculated, is representative of the traffic patterns and the seasonal variations therein for the individual lanes (since T-100 monthly traffic filings were used in the analysis). Since the current carriers considered in the transborder region operate only combination aircraft, freighter aircraft were not included in this analysis.



Analysis Methodology

STEP I

$$\begin{array}{c}
 \text{Aircraft volumetric belly LF per departure \%} \\
 \text{Lane } i
 \end{array}
 = \left\{ \begin{array}{c} \text{Passengers per departure} \times \text{Weight of baggage checked by each passenger} \div \text{Density of passenger bags} \end{array} \right\} + \begin{array}{c} \text{Freight volume per departure} \\ \text{Mail volume per departure} \end{array}$$

← **Volume occupied by passenger bags** →

Aircraft belly volumetric capacity

STEP II

$$\frac{\text{MOC}}{\text{Pound}} = \sum_{\text{Lane } 1}^{\text{Lane } n} \left(\frac{\begin{array}{c} \text{Aircraft Belly LF \%} \times \text{Weighted probability of LF exceeding TLF*} \times \text{Difference in freight and mail yield} \end{array}}{\text{Total USPS transborder volume}} \right)$$

Probabilistic Model

* **NOTE:** TLF denotes the Trigger Load Factor – an assumed aircraft belly utilization threshold, which if exceeded warrants payment of the MOC.



Analysis Methodology (cont.)

- *Passenger baggage cube:* Passenger load factor data on lanes of USPS interest was obtained from monthly T-100 data that the carriers file with the DOT. Estimates about the weight of the luggage checked in by the passengers on the transborder sector were obtained from the DOT. Assumptions about the cube of the checked luggage were utilized to derive the volumetric space occupied by passenger luggage in the aircraft belly.
- *Freight and mail cube:* T-100 filings also contain data about freight and mail weight loaded on the aircraft. Suitable density assumptions were made to derive the cube occupied by freight and mail.
- *Trigger Load Factor (TLF):* The TLF determines the belly volumetric load as a % of the gross belly cube, which if exceeded warrants payment of the MOC. For purposes of this analysis, a conservative TLF of 60% was assumed.



Probabilistic Model

- One of the factors that determine the calculation of the MOC is the probability of freight diversion – i.e., the likelihood that on all transborder lanes of USPS interest (i.e. lanes which carried mail on CY 2002), mail could potentially displace freight.
- Since baggage and mail have higher boarding priority than freight, mathematically,

$$\text{Probability of freight diversion} = \text{Probability of [mail volume + freight volume + luggage volume]} > \text{Net usable aircraft belly volume}$$

- To estimate the diversion probability, reliable underlying data is required. Also, as diversion occurs in a random manner (i.e., it is not uniform for a given day of week or for a given lane) statistical properties of the data have to be studied over an extended time-frame to measure the likelihood that mail may cause the diversion of freight on any given lane.
- Statistical properties (averages and standard deviations) of various load factor metrics (described on the previous slide) were obtained from the monthly T-100 data for a time frame of January – December 2002 to adequately capture any patterns associated with seasonality and to correspond with the Form 41 and T-100 filings.



Monte Carlo Simulation

- Though statistical averages over an extended time frame provide seasonal and cyclical variation, they do not adequately reflect variability patterns within a given month.
- Since the volume of mail, freight, and passengers may vary on a day-to-day basis, Monte Carlo style simulations were developed to fully account for variations within a given month based on the T-100 data.
- Monte Carlo simulations are a generally accepted technique for measuring risk. Using normally distributed disturbances around the mean load factors for each type of belly cargo (baggage, freight, and mail) the likelihood of the maximum load factor being exceeded over time can be calculated. This simulation tool approximates the variability of daily activity faced by the carriers on all relevant routes.



Monte Carlo Simulation (cont.)

- The adjusted load factor for each route is:

$$\text{Adjusted Load Factor} = \text{Average Load Factor (over 12 month period)} + \text{Standard Deviation} \times \text{Random number (following a normal distribution)}$$

- If the experiment is repeated n times, creating a distribution of occurrences (x) for each route when the load factor exceeds the Trigger Load Factor (TLF):

If Adjusted Load Factor [i] > TLF, then $x = x+1$, where $i = 1$ to n iterations.

- The ratio of occurrences (x) that exceed the load factor maximum to the total iterations (n) equals the probability distribution. For example, if $x = 15$ and $n = 100$,

$$\text{Probability distribution of freight diversion} = \frac{(x)}{(n)} = \frac{15}{100} = 15\%$$



Summary

- The results of the simulation indicate that a market opportunity cost of about 1 cent per pound is incurred by the carriers in the transborder region. As discussed earlier, this cost is not applicable for other regions as the displacement of freight does not cause the carrier to lose any revenue (given that the freight yields are lower than that of mail).

TRANSBORDER MARKET OPPORTUNITY COST			
	Mexico	Canada	Average
Opportunity Cost Payment (\$/kg)	\$0.02	\$0.02	\$0.02
Opportunity Cost Payment (\$/lb)	\$0.01	\$0.01	\$0.01

SOURCE: Simulation results



Personnel Screening Expense



Description & Methodology

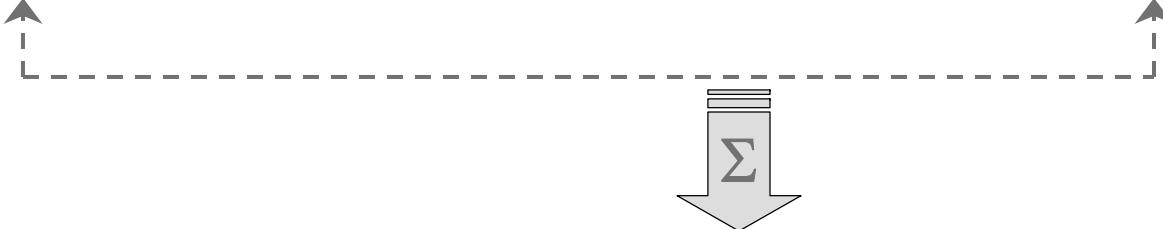
- Regardless of the mail security screening required by the TSA in the future, the airlines will still have to bear the costs associated with screening their personnel (a requirement for handling mail).
- Based on analysis performed prior to the commencement of the domestic FedEx transportation contract, the USPS has an understanding of the cost of screening airline personnel. Specifically, these costs include:
 - Hourly wage of employee processing file
 - Fingerprint checks
 - Disposition information
 - Supplies for maintaining cases
- For each of these cost elements, there are varying levels of rigor that must be applied based on the type of record that is categorized:
 - No record
 - Unclassifiable Prints
 - Record – Clearance
 - Record – Denied



Cost Inputs

- Past USPS experience indicates the following incidence of records and corresponding costs:

Category	Processing	Fingerprint	Disposition	Supplies
No record	\$16.02	\$23.00	\$0.60	\$0.26
Unclassifiable prints	\$20.03	\$23.00	\$0.60	\$0.26
Record - clearance	\$26.39	\$23.00	\$0.60	\$0.26
Record - denied	\$36.76	\$23.00	\$0.60	\$0.26



Category	% Occurrence	Total Cost
No record	75%	\$41.6
Unclassifiable prints	8%	\$46.0
Record - clearance	16%	\$52.9
Record - denied	1%	\$64.2

SOURCE: USPS analysis



Results

- Based on prior studies & analyses, it is estimated that total number of screenings for the international volume being considered would be about 6,947 with the following attendant cost of screening based on the type of case:

Category	Cases	Cost
No record	5,210	\$207,776
Unclassifiable prints	556	\$24,391
Record & clearance	1,111	\$55,851
Record & denied	69	\$4,211
Total Screening	6,947	\$292,229

Total CY 2002 Mail Volume (lbs) **204,916,214**

Cost per Pound **\$0.001**

NOTE: During CY 2002, carriers were not required to inspect/screen mail and hence potential costs associated with purchasing / operating any Explosive Detection Systems (EDS) are not included in the analysis.

SOURCE: USPS analysis



Incremental Landing Charges



Description

- Carriers incur service charges at airports based on the operations of their aircraft. Principally, these charges include:
 - Landing fees
 - Terminal navigation fees
 - Parking fees
 - Lighting, noise, security fees, etc.
- Airports use a formulaic approach for estimating these charges. The charges or fees are generally calculated based on various factors like the Maximum Takeoff Weight (MTOW) of the aircraft, number of landings or based on the type/noise category of aircraft. The landing fees are almost always based on the MTOW of the aircraft.
- As part of fair and reasonable compensation to the carriers, the USPS understands the need to compensate the carriers for the aircraft landing charges – to the degree that the on-board mail contributes to the payload of the aircraft.
- Since most other charges are not based on the aircraft weight, the carriers do not incur any incremental cost due to weight of mail carriage.



Methodology

- To get a reasonable estimate of the landing charges for each region, the top five countries based on destinating volume were identified and the landing fees at their leading airports were applied for the entire region's volume.
- The formulae to calculate landing charges at the leading destinating airport in the selected countries were obtained from IATA manuals.
- The landing charges were then calculated based on the prevalent aircraft types (identified earlier) for each region and their attendant characteristics (e.g. MTOW, structural payload).
- A weighted average landing charge per flight was calculated in local currencies and in US Dollars.
- The incremental portion of the landing charge caused by carriage of mail was then calculated based on the degree to which mail contributed to the structural payload of the prevalent aircraft type.



Key Aircraft Statistics

	Key Weight Parameters for Selected Aircraft Types			
	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
Prevalent Aircraft Types	777	M1F	757	M80
MTOW* (Metric Tonnes)	263	273	109	73
Structural Payload (lbs)	150,500	202,050	68,670	42,300

SOURCES: Manufacturer data via Aircraft Economics (Published by Euromoney Institutional Investor).

* See Appendix III for a listing of terms and definitions.



Atlantic Region

Airport		% Regional	Cost Item	Amount / Formula	Unit	Currency	Conversion of 1 local currency unit to USD	For Each Landing	
Code	City, Country	Volume						Local currency	USD
FRA	Frankfurt, Germany	36.19%							
			Landing Charge	1.62	per tonne	Euros	1.10	426	\$469
								426	\$469
LHR	London, UK	19.31%							
			Landing Charge (per landing)	750	flat fee	GBP	1.58	750	\$1,185
			Terminal Navaid Charge	125 + 0.5*[MTOW - 100]	total	GBP	1.58	207	\$326
								957	\$1,511
FCO	Rome, Italy	6.42%							
			Landing Charge	2.15 + [2.69*(MTOW - 25)]	total	Euros	1.10	643	\$707
								643	\$707
BAH	Bahrain	2.63%							
			Landing Charge	1.5*[MTOW]	total	BHD	2.64	394.64	\$1,042
								394.64	\$1,042
CDG	Paris, France	2.60%							
			Landing Charge	197.27 + [8.3*(MTOW - 50)]	total	Euros	1.10	1,966	\$2,163
								1,966	\$2,163
Weighted average fees per landing based on regional volume									\$879

COMMENTS:

1. Currency rates as of 08/31/03 from Financial Times (FT.com), except for Colombian Peso and Bahraini Dinar - Yahoo! Finance.
2. All formulae and related information on calculation of charges obtained from relevant IATA airport charges manual.



Pacific Region

Airport		% Regional Volume	Cost Item	Amount / Formula	Unit	Currency	Conversion of 1 local currency unit to USD	For Each Landing	
Code	City, Country							Local currency	USD
NRT	Tokyo, Japan	46.75%	Landing Charge	2400	per tonne	Yen	0.01	655,894	\$5,621
								655,894	\$5,621
SYD	Sydney, Australia	9.38%	Landing Charge	3.78	per tonne	AUD	0.65	1,033	\$671
			Terminal Navaid Charge	4.48	per tonne	AUD	0.65	1,224	\$796
								2,257	\$1,467
ICN	Seoul, Korea	15.05%	Landing Charge	1620000 + [7800*(MTOW-200)]	total	KRW	0.00	2,191,654	\$1,863
								2,191,654	\$1,863
MNL	Manila, Philippines	5.52%	Landing Charge	557.73 + 3.11*[MTOW - 100]	total	USD	1.00	1,097	\$1,097
								1,097	\$1,097
HKG	Hong Kong, China	3.46%	Landing Charge	2210 + [63*(MTOW - 20)]	total	HKD	0.13	18,167	\$2,362
								18,167	\$2,362
Weighted average fees per landing based on regional volume									\$3,977

COMMENTS:

1. Currency rates as of 08/31/03.
2. All formulae and related information on calculation of charges obtained from relevant IATA airport charges manual.

SOURCES: Financial Times (FT.com), except for Colombian Peso and Bahraini Dinar - Yahoo! Finance.



Latin American Region

Airport	% Regional						Conversion of 1 local	For Each Landing	
Code	City, Country	Volume	Cost Item	Amount / Formula	Unit	Currency	currency unit to USD	Local currency	USD
RIO	Rio De Janeiro, Brazil	17.16%	Landing Charge	5.66	per tonne	USD	1.00	616	\$616
			Terminal Navaid Charge	100.51 * [MTOW/50]^0.5	total	USD	1.00	148	\$148
EZE	Buenos Aires, Argentina	7.33%	Landing Charge	6.49	per tonne ¹	USD	1.00	707	\$707
BOG	Bogota, Colombia	6.35%	Landing Charge	664.27 USD + 298,466 COP	per landing ¹²	composite	0.00040		\$784
			Terminal Navaid Charge	409.7 USD + 227,700 COP	per landing ¹²	composite	0.00040		\$501
SCL	Santiago, Chile	4.99%	Landing Charge	4.69	per tonne	USD	1.00	511	\$511
LIM	Lima, Peru	4.79%	Landing Charge	5.55	per tonne	USD	1.00	\$604	\$604
Weighted average fees per landing based on regional volume									\$785

NOTES:

\1 For 80 - 170 tonne weight category.

\2 For 80 - 110 tonne weight category.

COMMENTS:

1. Currency rates as of 08/31/03.

2. All formulae and related information on calculation of charges obtained from relevant IATA airport charges manual.

SOURCES: Financial Times (FT.com), except for Colombian Peso and Bahraini Dinar - Yahoo! Finance.



Transborder

Airport	% Regional		Conversion of 1 local				For Each Landing		
Code	City, Country	Volume	Cost Item	Amount / Formula	Unit	Currency	currency unit to USD	Local currency	USD
YYZ	Toronto, Canada (Applicable to all Canadian airports)	87.30%	Terminal Navaid Charge (No Landing Charge)	13.38 * [MTOW]^0.9	total	CAD	0.72	633	\$456
								633	\$456
MEX	Mexico City, Mexico	12.70%	Landing Charge	13.321	per tonne	MXN	0.09	967	\$87
			Terminal Navaid Charge	165.08	per landing	MXN	0.09	165	\$15
								1,132	\$102
Weighted average fees per landing based on regional volume									\$411

COMMENTS:

1. Currency rates as of 08/31/03.
2. All formulae and related information on calculation of charges obtained from relevant IATA airport charges manual.
3. Only charges assessed per landing were included in the analysis.

SOURCES: Financial Times (FT.com), except for Colombian Peso and Bahraini Dinar - Yahoo! Finance.



Summary

	Incremental Landing Fees			
	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
Prevalent Aircraft Type	777	M1F	757	M80
MTOW* (Metric Tonnes)	263	273	109	73
Structural Payload (lbs)	150,500	202,050	68,670	42,300
Average tender per departure (lbs)	1,837	1,231	282	34
Average landing fees per landing (USD)	\$879	\$3,977	\$785	\$411
Mail weight as a % of structural payload	1.22%	0.61%	0.41%	0.08%
Incremental fees per landing caused by mail (USD)	\$10.73	\$24.23	\$3.22	\$0.33
Incremental fees per landing caused by mail (USD / lb)	\$0.006	\$0.020	\$0.011	\$0.010

SOURCES: Manufacturer data via Aircraft Economics (Published by Euromoney Institutional Investor).

* See Appendix III for a listing of terms and definitions.



General & Administrative Expense



Description

- Carriers incur expenses of a general corporate nature associated with performing activities like financial accounting, purchasing, legal representation and other general operational / administrative tasks.
- As part of its efforts to provide the carriers with fair and reasonable compensation for mail carriage associated with their cost structure, the USPS understands the need to pay the appropriate general and administrative (G&A) expense to the carriers.



Methodology

- G&A estimates were obtained for each of the four geographic regions for CY 2002 based on the carriers' Form 41 filings.
- Operating expenses incurred on a regional basis by the carriers for the same time frame were also obtained.
- G&A costs incurred by the carriers as a percentage of their operating expenses were then calculated.
- 'Transborder' region is not separated out as part of Form 41 filings, domestic statistics were used as a proxy in the transborder region calculations.
- Average G&A as percentage of the operating expenses were calculated for each one of the four regions.



Carrier Data

		CY 2002 Total Operating Expenses (USD in thousands)			
Rate Lane	→	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
Carrier					
AA		\$2,086,802	\$401,203	\$2,574,079	\$14,121,447
CO/CS		\$1,033,146	\$242,667	\$790,193	\$5,810,069
DL		\$2,281,108		\$635,121	\$10,389,952
NW		\$1,190,406	\$2,299,952		\$6,444,717
UA		\$2,173,383	\$2,962,612	\$655,324	\$11,146,095
US					\$7,051,390
FX			\$1,927,848		

		CY 2002 G&A Expenses (USD in thousands)			
Rate Lane	→	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
Carrier					
AA		\$189,086	\$29,263	\$169,326	\$1,301,484
CO/CS		\$87,733	\$27,910	\$66,590	\$757,447
DL		\$144,359		\$42,307	\$723,443
NW		\$48,077	\$86,931		\$281,686
UA		\$123,244	\$169,183	\$38,666	\$518,739
US					\$424,870
FX			\$380,432		

SOURCE: Form 41.



Results

Rate Lane →		CY 2002 G & A			
		<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
<u>Carrier</u>					
AA		9.1%	7.3%	6.6%	9.2%
CO/CS		8.5%	11.5%	8.4%	13.0%
DL		6.3%		6.7%	7.0%
NW		4.0%	3.8%		4.4%
UA		5.7%	5.7%	5.9%	4.7%
US					6.0%
FX			19.7%		

		Average G & A % by Region			
Rate Lane	→	Atlantic	Pacific	Latin	Transborder
Average		6.8%	8.3%	6.7%	7.0%

SOURCE: Form 41.



Profit



Description

- As part of its efforts to provide the carriers with fair compensation for mail carriage associated with their cost structure, the USPS understands the need to pay a reasonable rate of return to the carriers.



Methodology

- Operating profit (or loss) reported by region by carrier was obtained for each of the four regions from Form 41 filings.
- Operating revenue on a regional basis for the carriers for the same time frame were also obtained.
- Profit for the carriers as a percentage of their operating revenue was then calculated.
- Average regional operating profit as percentage of the operating revenue was then calculated. Since 'transborder' region is not separated out as part of Form 41 filings, and to eliminate the considerable noise from the domestic region filings, averages of the other regions were used as a proxy in the transborder region calculations.



Carrier Data

		CY 2002 Total Operating Revenues (USD in thousands)			
Rate Lane	→	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
Carrier					
AA		\$1,920,759	\$412,524	\$2,356,965	\$11,180,368
CO/CS		\$1,272,210	\$355,299	\$893,232	\$4,919,717
DL		\$1,969,907		\$569,885	\$9,735,987
NW		\$1,036,578	\$2,061,571		\$6,053,434
UA		\$1,882,611	\$2,482,524	\$489,105	\$9,061,361
US					\$6,065,486
FX			\$2,144,402		

		CY 2002 Operating Profit / Loss (USD in thousands)			
Rate Lane	→	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
Carrier					
AA		\$166,042	(\$11,321)	\$217,114	\$2,941,079
CO/CS		(\$239,064)	(\$32,679)	(\$103,039)	\$890,352
DL		\$311,203		\$65,236	\$653,968
NW		\$153,828	\$238,381		\$391,283
UA		\$290,773	\$480,086	\$166,217	\$2,084,734
US					\$985,903
FX			(\$216,554)		

SOURCE: Form 41.



Results

		CY 2002 Operating Profit/Loss			
Rate Lane	→	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
Carrier					
AA		8.6%	-2.7%	9.2%	26.3%
CO/CS		-18.8%	-9.2%	-11.5%	18.1%
DL		15.8%		11.4%	6.7%
NW		14.8%	11.6%		6.5%
UA		15.4%	19.3%	34.0%	23.0%
US					16.3%
FX			-10.1%		

		Profit % by Region			
Rate Lane	→	<i>Atlantic</i>	<i>Pacific</i>	<i>Latin</i>	<i>Transborder</i>
Average		8.4%	6.1%	8.0%	7.5%

SOURCE: Form 41.



Incremental Cost Summary



Incremental Cost Summary

Cost Item	Cost Estimate (\$ / lb)			
	Transatlantic	Transpacific	Latin	Transborder
Terminal Handling	\$0.140	\$0.176	\$0.150	\$0.210
Market Opportunity	\$0.000	\$0.000	\$0.000	\$0.009
Personnel Screening	\$0.001	\$0.001	\$0.001	\$0.001
Landing Charges	\$0.006	\$0.020	\$0.011	\$0.010
G & A	\$0.010	\$0.015	\$0.010	\$0.015
Profit	\$0.013	\$0.013	\$0.014	\$0.019
TOTAL	\$0.170	\$0.225	\$0.186	\$0.264
Fuel Cost (\$ / MTM)	\$0.019	\$0.017	\$0.025	\$0.024

NOTE: \1 Even though costs are rounded to the tenth of a cent, that does not necessarily represent the precision level of this analysis.

SOURCE: Incremental cost from results of the international mail rate analysis described in this document.



Appendix I: Relevant Excerpts from CAB / DOT Dockets



Relevant Excerpts from CAB/DOT Dockets

ORDER 79-7-17 ISSUED ON 3 JULY, 1979

- It is well recognized that the “costs of service” for a particular traffic such as mail cannot be determined with mathematical precision, indeed, involve large areas of judgment. (page 9)
- The assignment of costs common to various traffics in such a way as to reflect each traffic’s causal responsibility for increments in those costs is consistent with marginal cost principles, ... it is our intention that the costs assigned to mail reflect a marginal approach to the extent justified by the record in this proceeding. (page 27)
- If the transportation of mail is truly a minor by-product of passenger transportation (a reasonable presumption given the predominance of passenger traffic and revenues and the large amount of unused capacity in the bellies of combination aircraft), capacity costs allocable to mail under a truly marginal cost analysis could approach zero. This is true because any reasonably foreseeable increase or decrease in the volume of mail would not have any serious cost consequences from a capacity standpoint. (page 27)

NOTES: Emphasis taken from the the source document.
Page numbers refer to specific numbers in the CAB / DOT order.



Relevant Excerpts from CAB/DOT Dockets

ORDER 79-7-17 ISSUED ON 3 JULY, 1979

- ...we find it important to emphasize that none of the carriers disputes the factual basis for the Board's conclusion that combination aircraft are scheduled primarily for passengers in international service. (page 28)
- The Board has in fact stated its intention to explore procedural and analytical alternatives which will facilitate the establishment of future domestic and international mail rates on a marginal cost basis to the extent found desirable. (footnote # 39, page 28)
- If Pan American wishes to utilize its market power against the Postal Service, its remedy lies in the deregulation of mail rates, not in departures from marginal costing. (page 35)

NOTES: Emphasis taken from the the source document.
Page numbers refer to specific numbers in the CAB / DOT order.



Relevant Excerpts from CAB/DOT Dockets

ORDER 78-12-159 ISSUED ON 21 DECEMBER, 1978

- If the Postal Service were free to acquire air transportation on the basis of competitive offers, the Postal Service and the carriers would arrive at something like the competitive market rate. (page 26)
- A perfectly competitive market sets price at the level of marginal costs, but the detailed cost studies required to identify the true marginal costs of mail service are not available on this record. (page 26)

NOTE: Page numbers refer to specific numbers in the CAB / DOT order.



Relevant Excerpts from CAB/DOT Dockets

ORDER 78-11-80 ISSUED ON 16 NOVEMBER, 1978

- If mail and freight are in fact true byproducts of passenger service in the economic sense, then a lesser percentage allocation might well be justified, down to and including an allocation of zero capacity costs. (page 20)
- ... the purpose and function of marginal cost ratemaking is to replicate, as closely as possible, the pricing and resource allocation functions of a competitive marketplace. The courts increasingly have recognized that there is no legal or economic necessity to use fully allocated or fully distributed costs in the determination of “just and reasonable” or “fair and reasonable” rates. (page 23)
- Among other things, a factual-based marginal cost analysis permits a much more accurate picture of what joint product rates ought to be, and eliminates much of the rough judgment that goes into capacity causation. (page 23)
- We are more than a little troubled by the possibility that the rates we have set here are too high from the standpoint of efficient pricing, given the extent of the excess capacity in the aircraft bellies apparent on this record. (page 23)

NOTE: Page numbers refer to specific numbers in the CAB / DOT order.



Appendix II: Carrier & Equipment Codes



Carrier & Equipment Codes

Carrier Code	Carrier Name	Carrier Code	Carrier Name
AA	American Airlines	319	Airbus A319
CO	Continental Airlines	735	Boeing 737-500
CS	Continental Micronesia	738	Boeing 737-800
DL	Delta Airlines	744	Boeing 747-400
FX	FedEx	757	Boeing 757-All Series
NW	Northwest Airlines	763	Boeing 767-300
UA	United Air Lines	764	Boeing 767-400
US	US Airways	777	Boeing 777-All Series
		D10	McDonnell Douglas DC10 - All Series
		D9S	McDonnell Douglas DC9 - All Series
		M11	McDonnell Douglas MD11
		M1F	McDonnell Douglas MD11 - Freighter
		M80	McDonnell Douglas MD80 - All Series



Appendix III: Terms & Definitions



Terms & Definitions

Term	Full Name	Definition
AH	Airborne Hours	The time elapsed between an aircraft taking-off from the origin airport and landing at the destination airport. The taxi time is included in Block Hours (BH) - which is the time elapsed between an aircraft leaving an airport gate and it's arriving at the destination gate.
A-T-A	Airport-to-Airport	The term describing the origin and destination points of freight carried by the carriers. Carriers may also offer door-to-door freight transportation services.
ATM	Available Ton Mile	A measure of capacity - one ton of payload available for transport over one mile.
CAB	Civil Aeronautics Board	Predecessor to the Department of Transportation (DOT)
DOT	Department of Transportation	
DOD	Department of Defense	
FF	Fuel Factor	Gallons of fuel required per airborne hour to transport incremental payload for a given aircraft type.
IATA		International Air Transport Association
IC	Incremental Cost	Also referred to as marginal cost - the cost incurred over and above the base carrier operations because of transportation of mail.
IFC	Incremental Fuel Cost	The cost of fuel associated with incremental fuel burn caused by incremental payload on an aircraft.



Terms & Definitions

Term	Full Name	Definition
MOC	Market Opportunity Cost	The compensation provided to a carrier in instances where mail may potentially bump higher unit revenue yielding freight.
MOM	Military Ordinary Mail	A class of military mail having boarding priority equal to that of priority mail and above that of SAM.
MTOW	Maximum Take-off Weight	The weight limit specified by the manufacturer for a given aircraft type.
MTM	Mail Revenue Ton Mile	A measure of mail traffic - one ton of revenue generating mail transported for one mile.
RTM	Revenue Ton Mile	A measure of traffic - one ton of revenue generating payload transported for one mile.
SAM	Space Available Mail	A class of military mail having boarding priority lower than that of priority mail and MOM.
	Structural Payload	The net usable weight that can be carried by an aircraft (net of air frame, fuel, etc.)
THS	Terminal Handling Service	Ground operations associated with building of containers / pallets and potentially loading and unloading containers in aircraft.
TLF	Trigger Load Factor	An aircraft belly utilization threshold, which if exceeded warrants payment of the Market Opportunity Cost (MOC)
UIFC	Unit Incremental Fuel Cost	The Incremental Fuel Cost (IFC) divided by the total weight of incremental payload.
WAFF	Weighted Average Fuel Factor	The average fuel factor for a given region weighted by the departures performed by prevalent aircraft types operating in that region.



Appendix IV: Load Factor Analysis



Load Factor Analysis

- To gain an estimate of the utilization of aircraft belly space on international sectors, carrier T-100 filings for CY 2002 were analyzed.
- Monthly T-100 carrier filings were used in the analysis to get the underlying seasonal variations.
- Mail, freight and passenger traffic statistics were compiled on a lane basis for each equipment type operated by the individual carriers in the DOT regional cost pool.
- Using DOT guidance about amount of passenger baggage, manufacturer aircraft capacity data and USPS & industry estimates about product densities, the amount of belly space utilized was calculated.
- The analysis indicates that on average at least a third of the belly space was unutilized for each of the transportation regions. The percentage of belly space occupied by mail was in the low to mid single digits, with the bulk of the occupied belly space filled with passenger baggage and freight.
- Though specific flights on particular lanes may have markedly different belly load characteristics, the overall directionality of the results indicates presence of substantial amount of empty belly space on US outbound flights.



Load Factor Analysis – Monthly Details

US OUTBOUND BELLY LOAD FACTOR (LF) BY PRODUCT BY REGION: 2002¹

TRANSATLANTIC				
Month	Mail LF	Freight LF	Baggage LF	Belly LF
1	6.7%	26.6%	26.2%	59.5%
2	7.0%	30.6%	27.2%	64.8%
3	6.7%	32.9%	33.4%	73.1%
4	5.8%	27.2%	31.1%	64.1%
5	5.5%	26.2%	33.3%	65.0%
6	5.1%	26.9%	35.8%	67.9%
7	4.9%	22.6%	30.5%	58.0%
8	5.1%	23.7%	31.9%	60.6%
9	5.3%	25.4%	33.0%	63.6%
10	6.2%	29.7%	28.9%	64.8%
11	7.3%	34.7%	29.3%	71.3%
12	10.6%	29.9%	29.9%	70.3%
Average	6.3%	28.0%	30.9%	65.3%

TRANSPACIFIC				
Month	Mail LF	Freight LF	Baggage LF	Belly LF
1	6.1%	24.3%	30.5%	61.0%
2	7.0%	28.9%	32.0%	68.0%
3	6.4%	31.6%	33.0%	71.0%
4	5.6%	28.5%	32.6%	66.7%
5	5.3%	33.6%	31.7%	70.5%
6	5.2%	36.1%	32.4%	73.7%
7	4.4%	30.3%	33.4%	68.1%
8	5.2%	29.5%	31.6%	66.3%
9	5.2%	28.8%	30.1%	64.1%
10	5.8%	34.3%	30.5%	70.6%
11	5.9%	28.6%	31.6%	66.2%
12	7.8%	28.4%	30.9%	67.1%
Average	5.8%	30.2%	31.7%	67.8%

LATIN				
Month	Mail LF	Freight LF	Baggage LF	Belly LF
1	1.4%	6.1%	46.9%	54.5%
2	1.4%	5.1%	49.5%	56.0%
3	1.5%	5.3%	40.6%	47.4%
4	1.6%	5.4%	46.5%	53.5%
5	1.7%	5.3%	46.7%	53.6%
6	1.5%	5.3%	45.6%	52.4%
7	1.3%	4.6%	41.1%	47.0%
8	1.4%	6.4%	45.6%	53.4%
9	1.3%	5.8%	40.1%	47.2%
10	1.2%	5.8%	44.4%	51.4%
11	1.1%	5.9%	41.2%	48.2%
12	1.7%	5.8%	43.6%	51.2%
Average	1.4%	5.6%	44.3%	51.3%

TRANSBORDER				
Month	Mail LF	Freight LF	Baggage LF	Belly LF
1	4.2%	2.6%	50.9%	57.7%
2	2.7%	2.9%	57.0%	62.6%
3	4.1%	2.9%	61.8%	68.7%
4	4.3%	2.9%	56.6%	63.9%
5	4.2%	3.0%	59.5%	66.6%
6	3.6%	2.9%	52.3%	58.8%
7	2.8%	2.7%	51.4%	56.9%
8	2.7%	2.7%	64.3%	69.8%
9	2.8%	3.5%	51.9%	58.2%
10	3.4%	3.9%	54.4%	61.7%
11	2.3%	4.0%	53.4%	59.7%
12	4.2%	2.8%	59.0%	66.0%
Average	3.4%	3.1%	56.1%	62.5%

NOTE: ¹ For Transpacific, FX and NW freighter main deck statistics were included in the load factor calculation, per DOT carrier pool.
Month 1 = January.

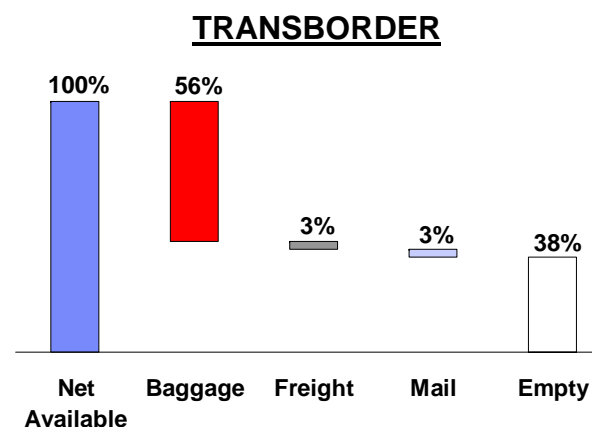
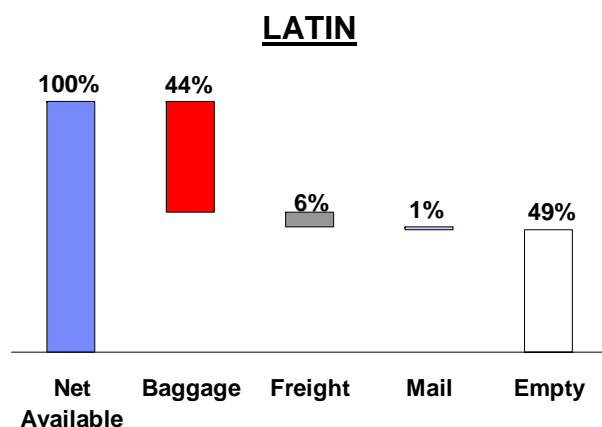
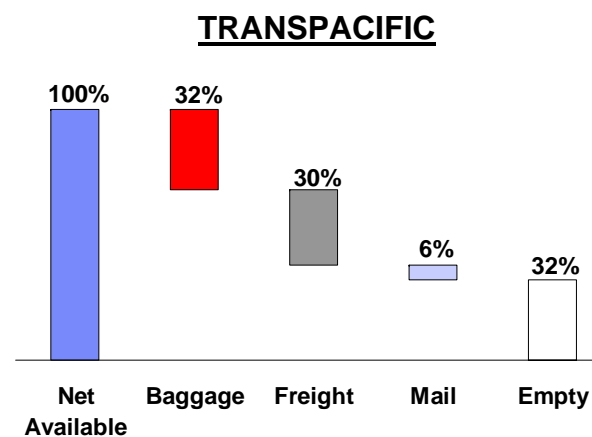
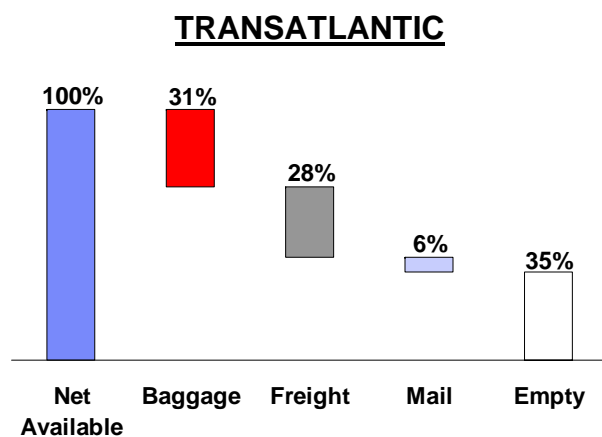
SOURCES: DOT T-100 monthly filings, USPS, capacity data from aircraft manufacturers, primary research.



Load Factor Analysis – Summary

US OUTBOUND BELLY LOAD FACTOR BY PRODUCT BY REGION: 2002¹

(Weighted Average Percent for DOT Carrier Pool)



NOTE: ¹ For Transpacific, FX and NW freighter main deck statistics were included in the load factor calculation, per DOT carrier pool.

SOURCES: DOT T-100 monthly filings, USPS, capacity data from aircraft manufacturers, primary research.



Appendix V: Freight & Mail Rate Comparison



Mail & Freight Rate Comparison - Transatlantic

Origin	Destination	Rates per Pound				
		DOT Mail Rate	Freight Rate ¹	Freight Rates Incl. Surcharge ²	Rate Differential ³	% Differential ⁴
LAX	AMS	\$1.40	\$0.46	\$0.58	\$0.82	142%
LAX	CDG	\$1.41	\$0.46	\$0.58	\$0.83	144%
LAX	FRA	\$1.44	\$0.47	\$0.59	\$0.85	143%
LAX	LHR	\$1.38	\$0.46	\$0.58	\$0.80	139%
LAX	LIN	\$1.48	\$0.48	\$0.60	\$0.89	148%
JFK	AMS	\$1.04	\$0.22	\$0.34	\$0.70	207%
JFK	CDG	\$1.04	\$0.19	\$0.30	\$0.74	243%
JFK	FRA	\$1.08	\$0.22	\$0.34	\$0.74	219%
JFK	LHR	\$1.01	\$0.18	\$0.30	\$0.71	237%
JFK	LIN	\$1.50	\$0.24	\$0.36	\$1.15	320%
ORD	LIN	\$1.21	\$0.32	\$0.44	\$0.77	174%
ORD	CDG	\$1.14	\$0.31	\$0.43	\$0.71	165%
ORD	LHR	\$1.10	\$0.26	\$0.38	\$0.72	190%
ORD	FRA	\$1.17	\$0.34	\$0.46	\$0.71	154%
ORD	AMS	\$1.13	\$0.31	\$0.43	\$0.70	164%
MIA	MAD	\$1.19	\$0.43	\$0.55	\$0.64	117%
MIA	FRA	\$1.26	\$0.44	\$0.56	\$0.70	125%
MIA	AMS	\$1.22	\$0.43	\$0.55	\$0.68	124%
MIA	LHR	\$1.19	\$0.36	\$0.47	\$0.72	151%
MIA	CDG	\$1.22	\$0.40	\$0.51	\$0.70	136%
MIA	LIN	\$1.28	\$0.43	\$0.54	\$0.74	135%
AVERAGE		\$1.23	\$0.35	\$0.47	\$0.76	170%

NOTES:

\1 For 1,000 kg weight breaks.

\2 Estimated fuel surcharge of \$0.15 per kilo and security surcharge of \$0.10 per kilo included.

\3 Indicates the value by which DOT mail rates are higher than the freight rates on a per pound basis (inclusive of surcharges).

\4 Indicates the % by which DOT mail rates are higher than the freight rates (inclusive of surcharges)

SOURCES: World ACD, primary research.



Mail & Freight Rate Comparison - Transpacific

Origin	Destination	Rates per Pound			Rate Differential ¹³	% Differential ¹⁴
		DOT Mail Rate	Freight Rate ¹¹	Freight Rates Incl. Surcharge ¹²		
LAX	NRT	\$1.91	\$0.38	\$0.50	\$1.41	282%
LAX	SIN	\$2.82	\$0.46	\$0.58	\$2.24	384%
LAX	HKG	\$2.40	\$0.35	\$0.47	\$1.93	410%
LAX	SYD	\$2.47	\$0.87	\$0.98	\$1.48	151%
LAX	SEL	\$2.05	\$0.42	\$0.54	\$1.51	280%
JFK	NRT	\$2.27	\$0.42	\$0.54	\$1.73	318%
JFK	SIN	\$3.02	\$0.46	\$0.58	\$2.44	424%
JFK	HKG	\$2.63	\$0.40	\$0.52	\$2.11	405%
JFK	SYD	\$3.12	\$1.12	\$1.24	\$1.88	151%
JFK	SEL	\$2.30	\$0.54	\$0.66	\$1.65	251%
ORD	NRT	\$2.14	\$0.38	\$0.50	\$1.64	329%
ORD	HKG	\$2.55	\$0.38	\$0.50	\$2.05	412%
ORD	SEL	\$2.20	\$0.42	\$0.54	\$1.67	311%
ORD	SIN	\$2.97	\$0.42	\$0.54	\$2.44	455%
ORD	SYD	\$2.94	\$0.94	\$1.06	\$1.88	178%
ORD	TPE	\$2.46	\$0.46	\$0.57	\$1.89	329%
ORD	SHA	\$2.35	\$0.44	\$0.55	\$1.80	324%
MIA	ICN	\$2.54	\$1.07	\$1.19	\$1.35	114%
MIA	SIN	\$3.25	\$0.62	\$0.74	\$2.52	340%
MIA	NRT	\$2.46	\$0.54	\$0.66	\$1.80	273%
MIA	HKG	\$2.88	\$0.70	\$0.81	\$2.06	253%
MIA	SYD	\$2.97	\$0.90	\$1.02	\$1.95	191%
AVERAGE		\$2.58	\$0.58	\$0.70	\$1.88	298%

NOTES:

\1 For 1,000 kg weight breaks.

\2 Estimated fuel surcharge of \$0.15 per kilo and security surcharge of \$0.10 per kilo included.

\3 Indicates the value by which DOT mail rates are higher than the freight rates on a per pound basis (inclusive of surcharges).

\4 Indicates the % by which DOT mail rates are higher than the freight rates (inclusive of surcharges)

SOURCES: World ACD, primary research.



Mail & Freight Rate Comparison - Latin

Origin	Destination	Rates per Pound			Rate Differential ^{\3}	% Differential ^{\4}
		DOT Mail Rate	Freight Rate ^{\1}	Freight Rates Incl. Surcharge ^{\2}		
ORD	GRU	\$1.86	\$0.82	\$0.94	\$0.92	98%
MIA	BOG	\$0.76	\$0.19	\$0.31	\$0.45	147%
MIA	EZE	\$1.62	\$0.50	\$0.62	\$1.01	163%
MIA	GRU	\$1.52	\$0.47	\$0.59	\$0.93	158%
MIA	SCL	\$1.54	\$0.49	\$0.61	\$0.93	154%
	AVERAGE	\$1.46	\$0.49	\$0.61	\$0.85	144%

NOTES:

\1 For 1,000 kg weight breaks.

\2 Estimated fuel surcharge of \$0.15 per kilo and security surcharge of \$0.10 per kilo included.

\3 Indicates the value by which DOT mail rates are higher than the freight rates on a per pound basis (inclusive of surcharges).

\4 Indicates the % by which DOT mail rates are higher than the freight rates (inclusive of surcharges)

SOURCES: World ACD, primary research.



Mail & Freight Rate Comparison - Transborder

Origin	Destination	Rates per Pound			Rate Differential ¹³	% Differential ¹⁴
		DOT Mail Rate	Freight Rate ¹¹	Freight Rates Incl. Surcharge ¹²		
MIA	MEX	\$0.58	\$0.44	\$0.55	\$0.03	6%
DFW	MEX	\$0.52	\$0.44	\$0.55	-\$0.03	-6%
SAT	MEX	\$0.47	\$0.44	\$0.55	-\$0.08	-14%
MIA	GDL	\$0.76	\$0.44	\$0.55	\$0.20	37%
JFK	GDL	\$0.97	\$0.42	\$0.54	\$0.44	81%
ORD	YVR	\$0.68	\$0.40	\$0.52	\$0.16	31%
ORD	YYZ	\$0.42	\$0.40	\$0.52	-\$0.09	-18%
DFW	YYZ	\$0.57	\$0.41	\$0.53	\$0.04	7%
PHL	YYZ	\$0.41	\$0.44	\$0.56	-\$0.15	-28%
DEN	YYC	\$0.51	\$0.47	\$0.59	-\$0.08	-13%
DTW	YUL	\$0.44	\$0.40	\$0.52	-\$0.07	-14%
	AVERAGE	\$0.58	\$0.43	\$0.54	\$0.03	6%

NOTES:

\1 For 1,000 kg weight breaks, express products.

\2 Estimated fuel surcharge of \$0.15 per kilo and security surcharge of \$0.10 per kilo included.

\3 Indicates the value by which DOT mail rates are higher than the freight rates on a per pound basis (inclusive of surcharges).

\4 Indicates the % by which DOT mail rates are higher than the freight rates (inclusive of surcharges)

SOURCES: World ACD, primary research.